

## SERVICE MANUAL

1946 Models 55X11, 55X12, 55X13, 55X11-A, 55X12-A and 55X13-A

### TO THE SERVICEMAN:

This receiver is a conventional superheterodyne, covering 535-1620 kilocycles. The IF frequency is 455 Kc.

Chassis HS-1 is used in Models 55X11, 55X12 and 55X13. Chassis HS-50 is used in Models 55X11A, 55X12A and 55X13A. Models differ in cabinet and hardware (see parts list.) Chassis differ in circuit (see Figure 8.)

NOTE: Chassis numbers are rubber stamped on back of the chassis.

The following instructions apply to both chassis unless specifically stated.

### RESTRINGING INSTRUCTIONS FOR POINTER AND GANG DRIVE CORD

#### HS-1 CHASSIS (SEE FIGURE 1)

1. Remove the chassis from the cabinet.
2. Remove the broken cord.
3. Turn gang to full mesh position.
4. Cut a 31" length of 18 lb. silk fish cord.
5. Restring by placing cord around dial pulley, over shoulder rivets, and around gang pulley.
6. Tie cord to tension spring and fasten spring as shown in illustration.
7. Place a drop of shellac on cord knot.
8. Install and adjust pointer.
  - a. Leave gang in full mesh position.
  - b. Set pointer to "V" notch at low end of the dial.
  - c. Clamp pointer to cord.
  - d. Fix pointer to cord with a drop of shellac.
  - e. The cord must not be too tight or bind, as too much tension will prevent the planetary drive (tuning shaft) from pulling the pointer. All elements of the pointer and string system must be free running.

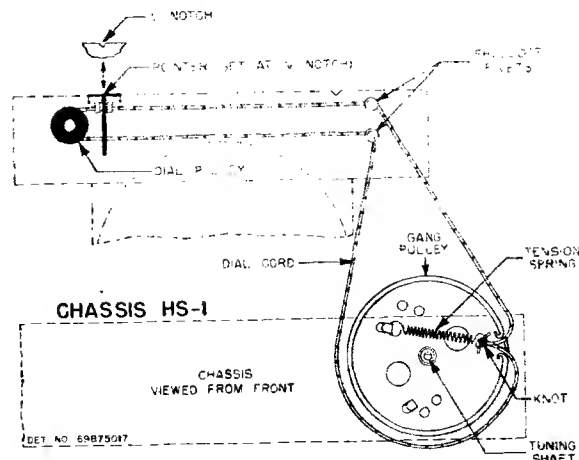


FIGURE 1. DIAL CORD DRIVE (HS-1)

## GALVIN MANUFACTURING CORPORATION

4545 AUGUSTA BLVD.

54P75020

CHICAGO 51, ILLINOIS

# Motorola

## ALIGNMENT CHART

Connect output meter across speaker voice coil (.38 V = .05 watt)  
Volume control set at maximum for all operations  
The adjusting screwdriver or alignment tool should be of the insulated type, such as Motorola Part No. 66A71008

OPERATIONS IN ORDER	GANG CAPACITOR SET AT	DUMMY ANTENNA	GENERATOR CONNECTED TO	ADJUST TRIMMER TO	GENERATOR SET AT 400~ 30% MODULATED	AVERAGE MICRO- VOLT INPUT FOR .38V OUTPUT
1. Align I.F. and Diode for Maximum	Minimum	.1 mf	Osc.-Mod.* Grid & B-	1-2-3-4	455 Kc	3000 Microvolts to I. F. Grid
2. Set Oscillator to dial scale	1620 Kc	.1 mf	Osc.-Mod.* Grid & B-	5	1620 Kc	
3. Align R.F. for Maximum	1400 Kc	None	**Radiation	6	1400 Kc	45 Microvolts to Osc.Mod Grid thru .1 mf dummy .03 Volts at 400~ to 1st A.F.Grid
4. Repeat above steps for maximum accuracy.						

- \* A convenient point for connection to B-, is the common terminal of the electrolytic capacitor, located in the middle of the chassis (bottom).
- \*\* Connect output of signal generator to a 5" diameter, 3 turn loop. With volume on full, and output meter connected across voice coil, bring loop close enough to receiver loop until output of 50 milliwatts is obtained (.38V on output meter) Vary distance between generator and receiver loops to maintain this output during alignment.

## RESTRINGING INSTRUCTIONS FOR POINTER AND GANG DRIVE CORD

### HS.50 CHASSIS (SEE FIGURE 3)

1. Remove the chassis from the cabinet.
2. Remove the broken cord.
3. Turn gang to full mesh position.
4. Cut a 27" length of 18 lb. silk fish cord.
5. Replace new cord as follows:
  - a. Tie one end of cord to tension spring on gang pulley.
  - b. Make one complete turn around gang pulley in a counter-clockwise direction.
  - c. Route the cord under and over shoulder rivets #1 and #2.
  - d. Route the cord the length of dial scale, around the dial pulley, and over shoulder rivet #3.
  - e. Make 3-1/2 turns around the tuning shaft in a counter-clockwise direction.
  - f. Place cord over the bracket pulley and shoulder rivet #4 to the gang pulley.
  - g. Place cord around the gang pulley counter-clockwise to the tension spring and tie.
6. Place a drop of shellac on the cord knots.
7. Install and adjust pointer.
  - a. Leave gang in full mesh position.
  - b. Set pointer to "V" notch at low end of the dial.
  - c. Clamp pointer to cord.
  - d. Fix pointer to cord with a drop of shellac or household cement.

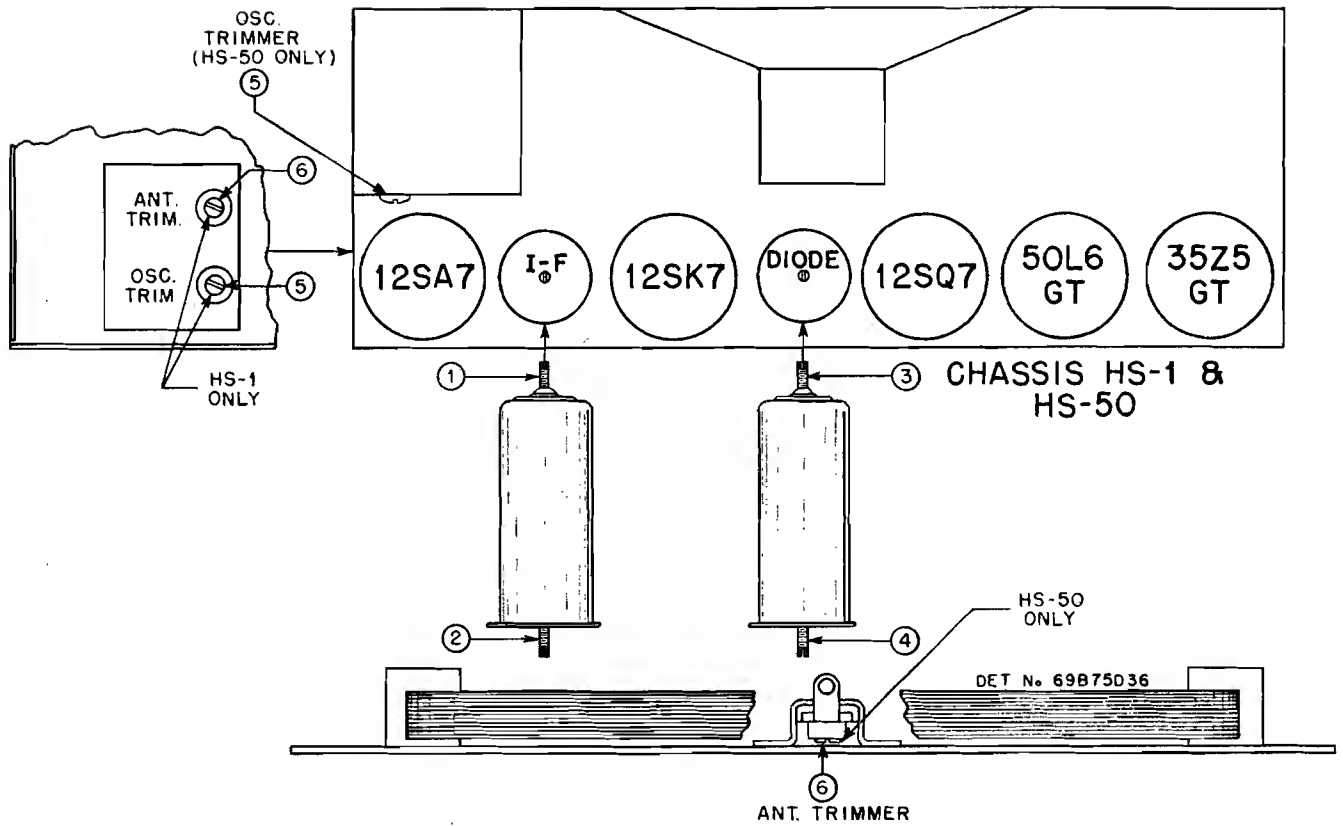


FIGURE 2. TUBE AND TRIMMER LOCATION

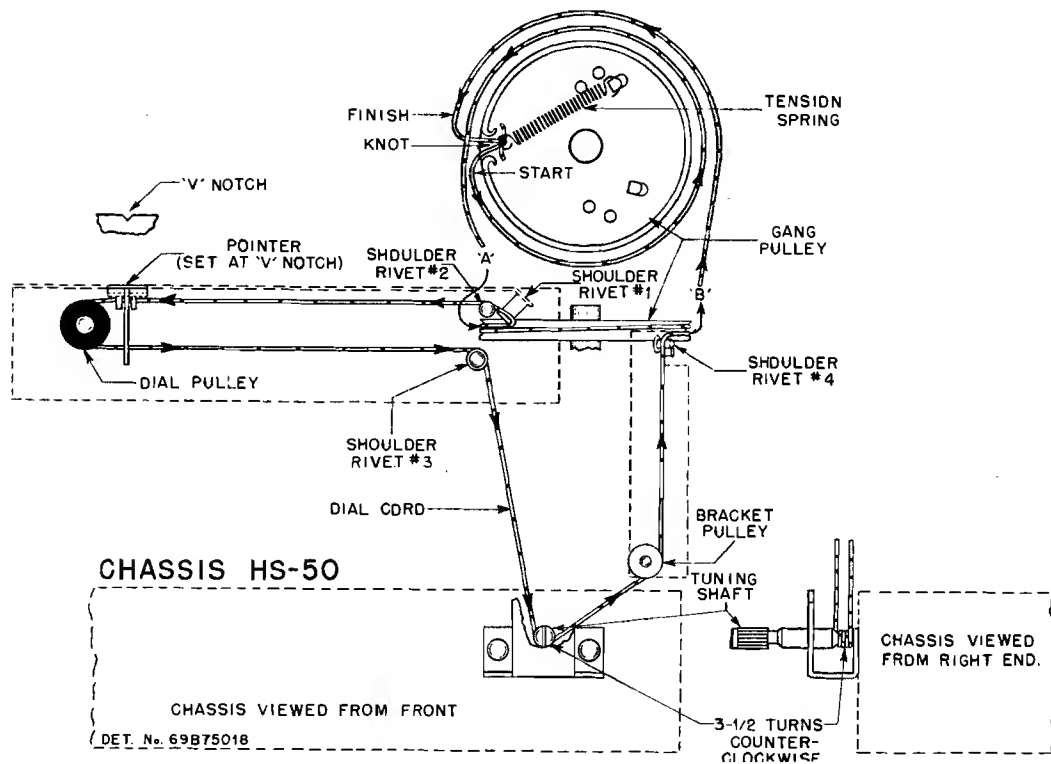


FIGURE 3. DIAL CORD DRIVE (HS-50)

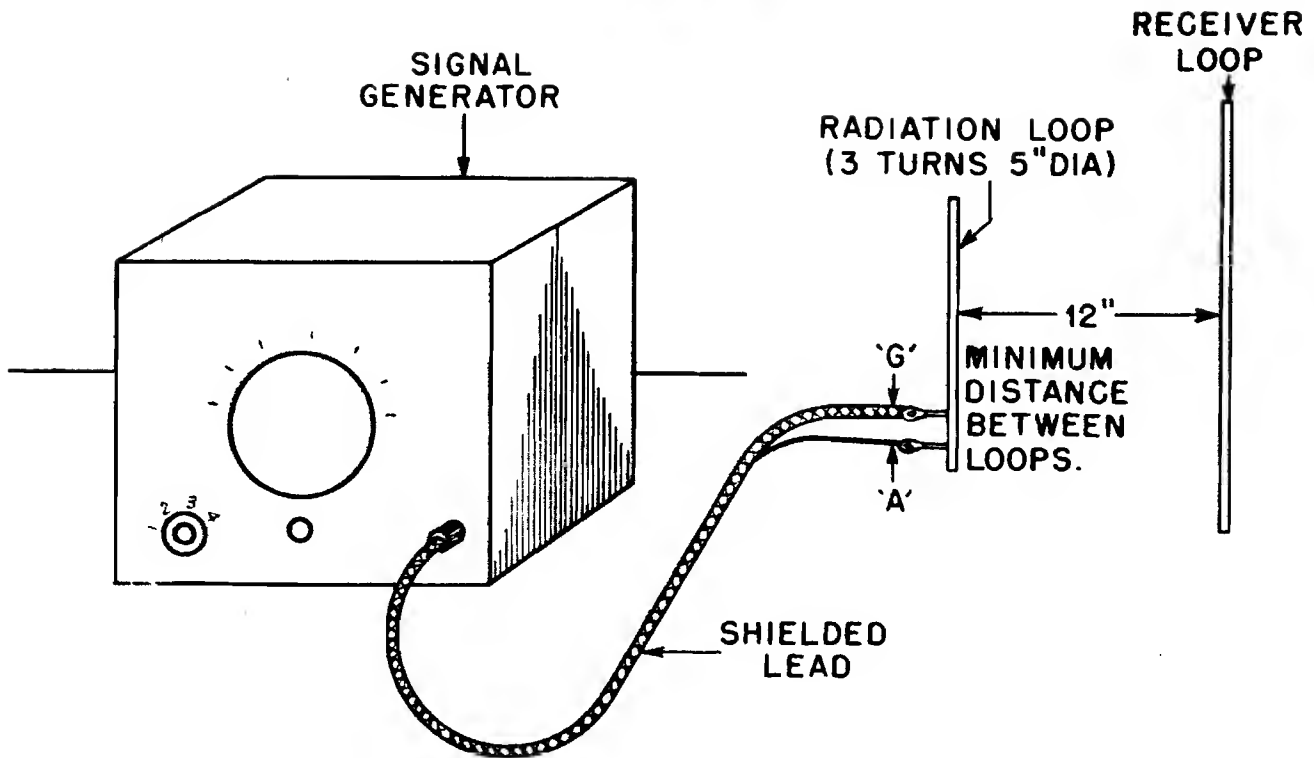


FIGURE 4. METHOD OF RADIATING SIGNAL TO THE RECEIVER

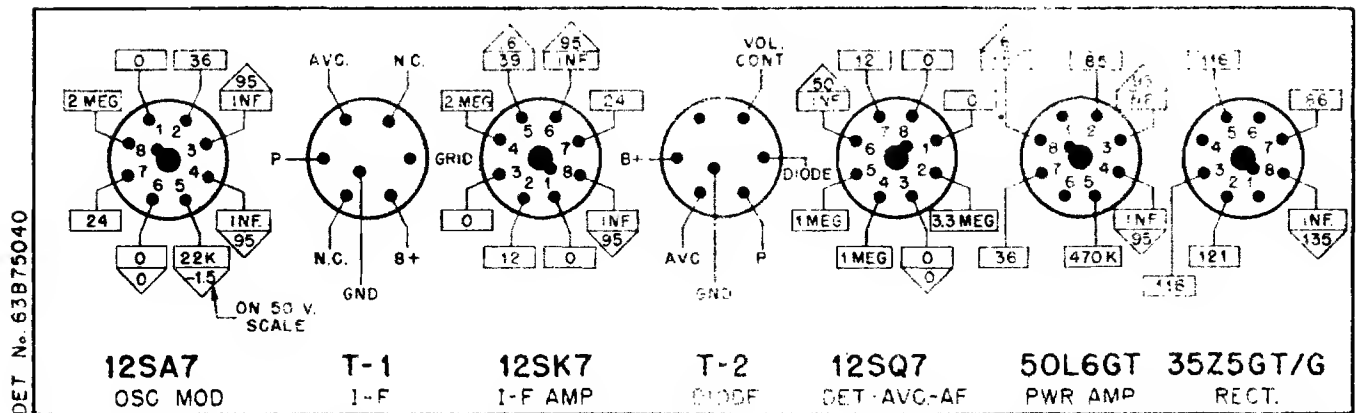


FIGURE 5. VOLTAGE AND RESISTANCE CHART

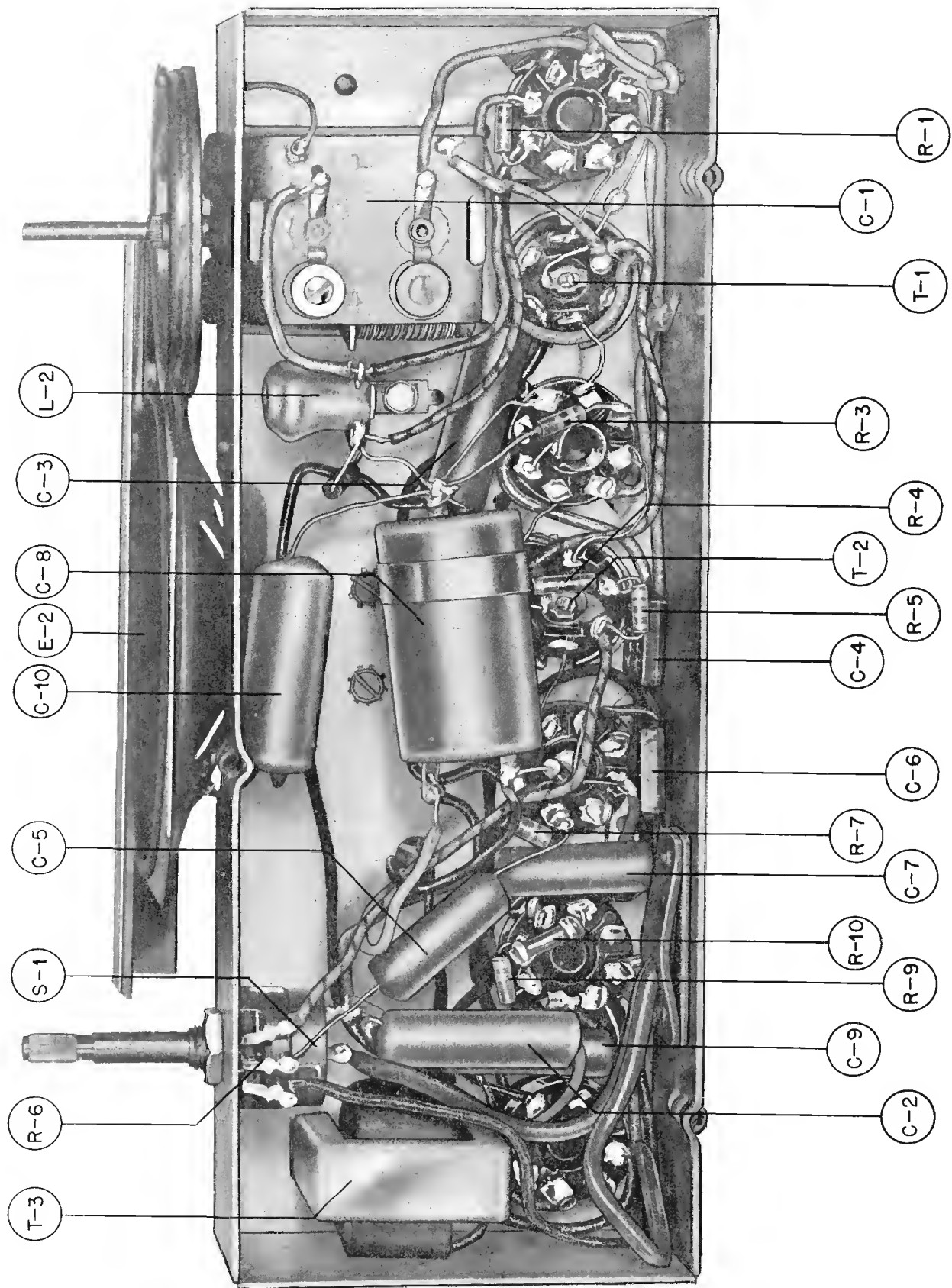


FIGURE 6. BOTTOM VIEW (CHASSIS HS.1)

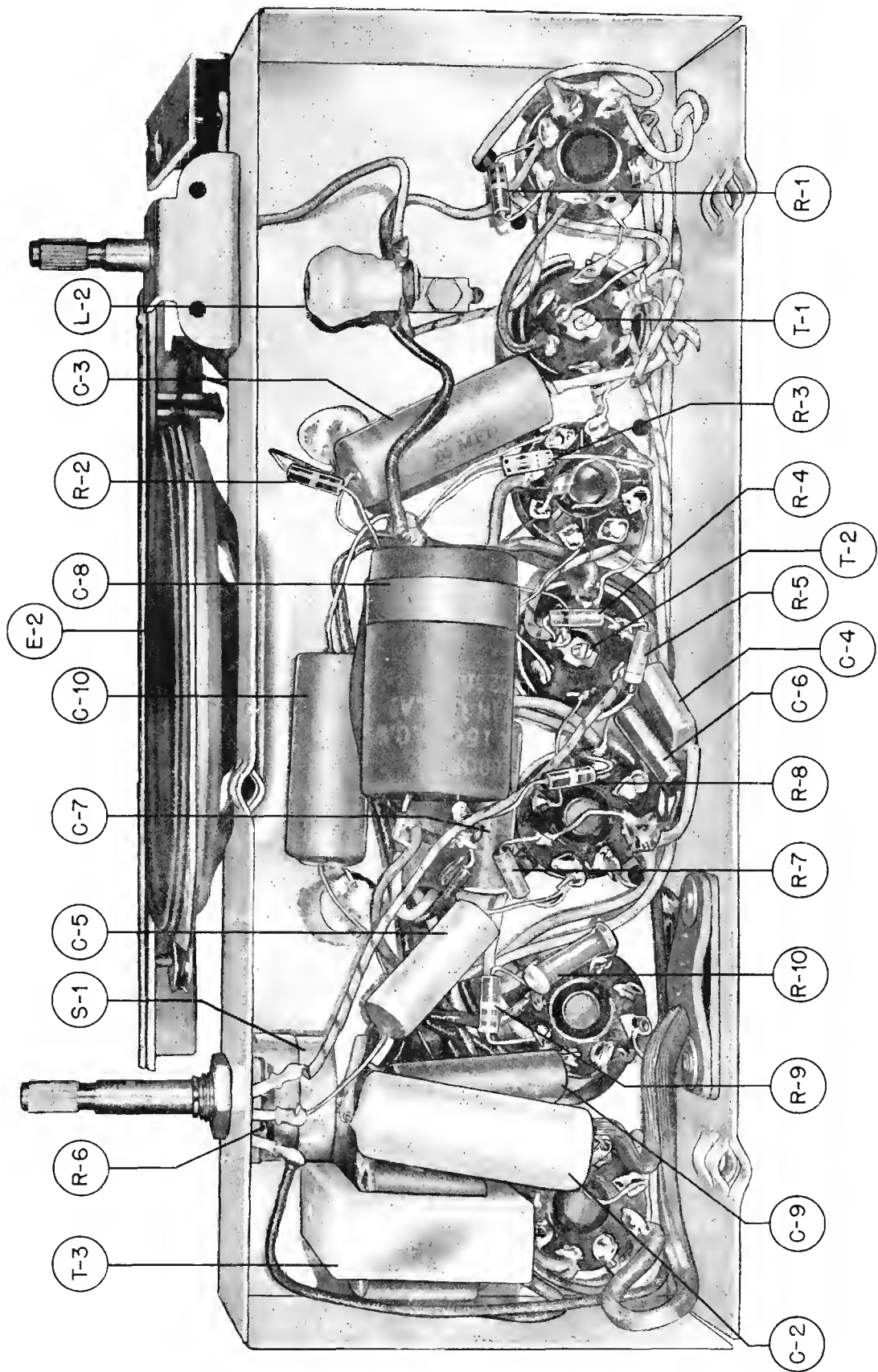


FIGURE 7. BOTTOM VIEW (CHASSIS HS-50)



# PARTS PRICE LIST

REF. PART NO. NO.	DESCRIPTION	LIST	REF. NO.	PART NO.	DESCRIPTION	LIST
C-1	19B70080 Capacitor, variable: 2 gang and pulley assembly (55X11, or 1X72550 Capacitor, variable: 2 gang 12&13)	\$3.90	T-1	24B70531	Transformer, I.F.; 455 Kc; complete less shield	1.05
C-1	1X74747 Capacitor, variable: 2 gang and pulley assembly (55X11A, 12A & 13A)	3.50	T-2	24B70533	Transformer, diode; 455 Kc; complete less shield	1.40
C-2	8S9816 Capacitor, fixed: paper; .05 mf 20% 400 vdc	.20	T-3	25B70063	Transformer, output	1.95
C-3	8S9816 Capacitor, fixed: paper; .05 mf 20% 400 vdc	.20		1X72550	Assembly, pulley and bushing (55X11, 12 & 13 replacement)	
C-4	21R6648 Capacitor, fixed: mica; 250 mmf 20% 500 vdc	.20		1X74746	Assembly, gang mtg. brkt: less gang (55X11A, 12A, 13A)	.30
C-5	8S9809 Capacitor, fixed: paper; .01 mf 20% 400 vdc	.15		1X74738	Assembly dial background mtg. (55X11A, 12A & 13A)	.45
C-6	21R6648 Capacitor, fixed: mica; 250 mmf 20% 500 vdc	.20		1X70084	Bracket, dial brkt. and pulley (55X11, 12 & 13)	.35
C-7	8S9809 Capacitor, fixed: paper; .01 mf 20% 400 vdc	.15		7A72488	Bracket, dial scale retainer; cad. pl (55X13 & 13A)	.05
C-8	23A70008 Capacitor, fixed: electrolytic; dual 20 mf 150 vdc	1.35		7A14684	Bracket, tuning shaft; cad. pl; (55X11A, 12A & 13A)	.10
C-9	8S9802 Capacitor, fixed: paper; .02 mf 20% 400 vdc	.15		38A10544	Button, plug; 1/4" for 1/16"; cop. oxd. (55X11, 12 & 13)	.30
C-10	8A72686 Capacitor, fixed: paper; .15 mf 20% 200 vdc	.25		16E70027	Cabinet, plastic; brown finish (55X11)	3.25
	or 8A75566 Capacitor, fixed: paper; .15 mf 20% 400 vdc			16K70475	Cabinet, plastic; ivory finish (55X12)	4.55
	20A74404 Capacitor, trimmer; includes "A" brkt (loop back) 55X11A, 12A & 13A			51X70401	Cabinet, walnut veneer (55X13)	10.00
	21B70826 Capacitor, fixed: mica; dual (used in T1 & T2)	.30		16K72776	Cabinet, plastic; brown finish (55X11A)	3.60
E-1	1X70081 Capacitor and choke assembly	.45		56K72777	Cabinet, plastic; ivory finish (55X12A)	4.50
E-2	50B70076 Speaker, electrodynamic; 4 inch (HS-1 & HS-50)	.30		16K72779	Cabinet, walnut veneer (55X13A)	10.50
	or 50K76379 Speaker, electrodynamic; 4 inch (HS-50 only)	5.45		42B70721	Clip, coil (used on T1 & T2)	doz. .30
				42A18764	Clip, mounting (loop and back)	per/c .95
				35K70445	Cloth, grille (55X13 & 13A)	.10
				11M8944	Cord: dial; 18# black; 27"	yd. .10
				30A151	Cord. line; 6 ft. and plug	.45



I-1	65X11854	Bulb: 6.3V - .15A; tubular bayonet #47	.15	48A70023	Core, Iron and Screw (used in T1 & T2)	.15
L-1	24C70439	Coil; antenna loop and panel assembly 55X11	1.80	15A70028	Cover, gang (55X11, 12 & 13)	.10
	24K70440	Coil; antenna loop and panel assembly 55X12	2.25	5A70078	Eyelet, gang mounting (55X11, 12 & 13)	per/c 1.20
	24K70441	Coil; antenna loop and panel assembly 55X13	2.10	5S7805	Eyelet, snap-in; .156 x .141; cad. pl. (dial background)	per/c .70
	24C74406	Coil; antenna loop and panel 55X11A	2.20	37K15841	Foot, rubber; 3/4 dia. (55X13 & 13A)	doz. .35
	24C74407	Coil; antenna loop and panel 55X12A	2.10	5A72680	Grommet: rubber (gang cushion 55X11, 12 & 13)	doz. .50
L-1	24K74408	Coil; antenna loop and panel (55X13A)	1.00	37A12691	Grommet: rubber (gang cushion 55X11A, 12A & 13A)	doz. .35
L-2	24A70424	Coil; oscillator (55X11, 12 & 13)	.85	36K25724	Knob, control; molded; ivory (volume control 55X12. Tuning and volume 55X12A)	.10
R-1	6R6028	Resistor; fixed; carbon; 22,000 ohms 20% 1/2W Ins.	doz. .60	36K70486	Knob, control; molded; ivory with clip (Tuning control 55X12)	.15
R-2	6R6015	Resistor, fixed; carbon; 220,000 ohms 20% 1/2W. Ins.	doz. .60	36A21887	Knob, control; molded; brown (volume control 55X11 & 13 Tuning and volume 55X11A & 13A)	.10
R-3	6R2085	Resistor, fixed; carbon; 39 ohms 10% 1/2W Ins.	doz. .60	36A70447	Knob, control; molded; brown with clip (tuning control 55X11 & 13)	.15
R-4	6R6004	Resistor, fixed; carbon; 1 megohm 20% 1/2W. Ins.	doz. .60	32A24815	Lock, line cord	doz. .30
R-5	6R6056	Resistor, fixed; carbon; 47,000 ohms 20% 1/2W. Ins.	doz. .60	3S7205	Lockscrew, steel: 8-32 x 1/4 S1 HH: Cad. Pl. (speaker Mtg)	per/c .95
R-6	18A70032	Resistor, variable; carbon; 1 megohm with SPST. switch	1.00	4S7695	Lockwasher; #5 Int. Cad. Pl. (loop and back 55X11, 12 & 13)	doz. .45
R-7	6R2118	Resistor, fixed; carbon; 3.3 megohms 20% 1/2W. Ins.	doz. .60	2S7051	Nut: 3/8-32 x 9/16, Palnut: C.P. (volume control)	doz. .30
R-8	6R6015	Resistor, fixed; carbon; 220,000 ohms 20% 1/2W. Ins.	doz. .60	2B70703	Nut, Special Palnut (used in T1 & T2)	doz. .25
R-9	6R6032	Resistor, fixed; carbon; 470,000 ohms 20% 1/2W Ins.	doz. .60	2A70775	Nut, Speed: Timmerman #520 (dial brkt. mtg.)	doz. .25
R-10	6R6392	Resistor, fixed; carbon; 150 ohms 10% 1/2 W.N.I.	doz. .60	2A70434	Nut, Speed: Timmerman #156 (dial scale mtg. 55X11, 12 & 13)	doz. .25
S-1		Switch, SPST: part of R6 (volume control)		38A25507	Plug, split; 5/8": Cop. Ox. (Back and loop)	doz. .20
				52A71079	Pointer, dial	.20

REF. PART NO.	DESCRIPTION	LIST	REF. PART NO.	DESCRIPTION	LIST
49A12848	Pulley, Cord: 7/32" groove (dial string 55X11A, 12A & 13A)	.05	3S7119	Screw, Steel: 6/32 x 1/4 S1 ABHD; Cad.Pl. (Replace gang brkt.)	doz. .35
49A15045	Pulley, Cord: 11/64" groove (dial string 55X11A, 12A & 13A)	doz. .20	3S7526	Screw, Steel: #8 - 1-1/8 PKA S1 HH; Cad. Pl. (Chassis mtg. 55X13 & 13A)	doz. .30
49A21552	Pulley, Cord: 1/2" groove (dial string)	doz. .20	29A70422	Screw, terminal (loop and back)	doz. .35
or 49A71078			47A72659	Shaft, Tuning (55X11A, 12A & 13A)	.25
5A13896	Rivet, shoulder: .312" Sh; Pol.Nkl. (dial string)	doz. .40	1A71049	Shield and Sleeve Assembly (I.F. & Diode Coils)	.50
5A15045	Rivet, shoulder: .437" Sh; Pol.Nkl. (dial string 55X11A, 12A & 13A)	doz. .20	41A70705	Spring, Coil (used in T1 & T2)	.40
5S7708	Rivet, Steel: 9/32 x .122; Pol. Nkl. (line cord lock)	doz. .20	41A73619	Spring, Tension Coil (dial cord 55X11A, 12A & 13A)	.05
5S7707	Rivet, Steel: 5/32 x .122; Pol. Nkl. (tube socket mtg. & C-8 mtg.)	per/c .60	41A22596	Spring, Tension Coil (dial cord 55X11, 12 & 13)	doz. .35
5S7716	Rivet, Steel: 5/32 x .122	per/c .45	42A70423	Strap, ground (loop and back)	doz. .25
5S7718	Pol. Nkl. (mounting clip - loop and back)	per/c .45	35A70074	Strip, Dial background	.20
			31K15026	Strip, terminal: 2 Ins. #2 mtg; 3/8" (loop and back 55X11, 12 & 13)	.05
			46A72766	Stud, Trimount; black	.25
			9A70070	Socket, Pilot Light and Leads	.15
			9A6790	Socket, tube; octal; (for 35Z5, 50L6, 12SA7, & 12SQ7)	.15
34B74430	Scale, dial: glass (55X11A, 12A & 13A)	.60	or 9A6787		
34B70435	Scale, dial: glass (55X11, 12 & 13)	.45	or 9A6788		
3S7401	Screw, Steel: #2 x 3/8 PHOWS; Ant. Cop. (55X13 & 55X13A dial brkt. mtg.)	.25	9A6792	Socket, tube: octal; (for 6SK7)	.15
3S7506	Screw, Steel: #6 x 1/4 PKZ P1 HH; Cad. Pl. (gang cover and I-2 mtg.)	per/c .50	or 9A70165		
3S7331	Screw, Steel: 6-32 x 3/8 S1 FHMS; Cad. Pl. (gang mtg. 55X11, 12 & 13)	per/c .45	4S1770	Washer, brass: .365-.234-.025 (gang mtg. 55X11, 12 & 13)	per/c .70
3S8117	Screw, Steel: #8 x 1 PKZP S1 HH; Ant. Cop. (Chassis mtg. 55X11, 12, 11A & 12A)	doz. .20	4A70015	Washer "C" (Tuning shaft 55X11A, 12A & 13A)	doz. .20
			4K22505	Washer, paper: 11/16 x 17/64 x 1/32 (under knobs 55X12A)	per/c .70
			35K70460	Washer, paper: 11/16 x 9/64 x 1/32 (used under tuning knob 55X11, 12 & 13)	doz. .20
					per/c .95

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35K19943	Washer, paper: 11/16 x 17/64 x 1/32 (used under knobs 55X11A 13A and under volume control 55X11, 12 & 13)		4S8204	Washer, Steel: 1"-203-.067; Cop.Pl. Chassis mtg. 55X13 & 13A only)	doz.	.25
32A20575	Washer, spacer: 3/8-.171-.062 (Chassis mtg. 55X11 & 12)	per/c .80 per/c .50	4S1719	Washer, Steel: 3/8-.140-.030; Cad.Pl. (Line cord lock mtg.)	per/c	.55

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## **SERVICE NOTES**